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Making sense of network dynamics through network pictures: A longitudinal case study

David Ford, Michael Redwood *

School of Management, University of Bath, Bath BA2 7AY, UK

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Abstract

There have been a number of attempts to describe and analyse networks and company positions in them and to help companies to manage or change their "network position" [Håkansson, H. & Snehota, I. (1995) Developing Relationships in Business Networks, Routledge. London; Ford, D., Gadde, L. -E., Håkansson, H., Snehota, I., (2003) Managing Business Relationships, 2nd Edition, Wiley and Sons Ltd.]. But most of these have confined their attention to a particular point in time or have looked at network evolution over a restricted time period, such as Lundgren (1995) [Lundgren, A. (1995) Technological Innovation and Network Evolution. Routledge, London and New York.] and Andersson (1996) [Andersson, Per (1996), The emergence and change of Pharmacia Biotech 1959-1995. The power of the slow flow and the drama of great events, doctoral thesis, Stockholm School of Economics, Stockholm.]. This paper is based on the idea that insights into the dynamics and evolution of networks and companies may be found by taking a longer term perspective. It uses historical documents and correspondence to examine the evolution of a network and of a single company within it over a period of close to a century. The paper highlights the fact that networks and networking are not modern inventions, but are intrinsic to the nature of business activity. The case study also provides illustration of a number of network phenomena, such as network position, networking and the paradoxes that are endemic in networks. Finally, the paper concludes with some lessons that may be drawn from the case for successful management in a network.

Keywords: Networks; Innovation; Network evolution; Leather; Booth and Company; Technology development

1. Introduction

The operations of business networks and of the companies within them have become better understood during the last decade. Various attempts have been made to describe and analyse networks and company positions *at a particular point in time* and to help companies to manage or change their network position (Ford, Gadde, Håkansson, & Snehota, 2003; Håkansson & Snehota, 1995). There have also been some studies that have examined network evolution over time, such as Lundgren (1995) and Andersson (1996). It is clear from this research that networks are not created, controlled, operated or owned by a single company. There are no new networks. When a new company emerges, it does so into an existing network. The company's start and subsequent development will be affected by the interactions that are and have already taken place in that network. But in turn, the company will have an effect on the network itself.

This paper seeks to show how insights into the development of a single business can be obtained by examining the interplay between the business and the evolving network of which it forms part. The paper examines the case of a single business and the surrounding network over an extended period of nearly a century, encompassing a number of technological life-cycles. By taking this long-term view of social, economic, technical and political events and the actions of significant actors within the network, the paper also aims to shed further light on these processes of network evolution. The paper relates this evolution to current and emerging ideas on the dynamics of business networks,

* Corresponding author. Tel.: +44 1225 826726.
E-mail addresses: mnsidf@management.bath.ac.uk, mike@mikeredwood.com (M. Redwood).

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Table 1
The three network paradoxes

PARADOX 1:
A company's relationships are the basis of its operations and development.
BUT
These relationships may also tie it to its current ways of operating and restrict its ability to change.
PARADOX 2:
A company's relationships are the outcome of its own decisions and actions.
BUT
The company itself is equally the outcome of its relationships and what has happened within them.
PARADOX 3:
Companies try to manage their relationships and control the network that surrounds them to achieve their own aims.
BUT
The more that a company achieves this ambition of control, the less effective and innovative the network will be.

including the 'Model of Management in Networks' (Ford et al., 2003). The analysis also takes into account the inherent paradoxes of networks as described in Table 1 (Håkansson & Ford, 2002).

2. Making sense of changing times

Håkansson and Snehota (1995) explain that even if a business tries to remain static within its network, the network itself is continuously evolving and changing all the companies within it. Conversely, they observe that when actors choose to make a number of small positional moves, it does not take long before the whole network may look substantially different. Each member of the network can have an impact on the look and form of the network (Andersson, Håkansson, Johanson, 1994). Thus over a period of time we can expect to see significant changes in the characteristics of the network and the presence, absence or position of any one company within it.

Naturally we expect companies to try to influence those around them in order to better secure their long-term future. But these attempts at influence will be based on the company's view of the complex inter-dependencies that exist in the network, their "network picture" (Ford et al., 2003). But it is unrealistic to think that a company can "make sense" of a network of effectively infinite size and complexity (Blankenberg, 1992; Holmen & Pederson, 2001). Lundgren (1995) suggests that when a company is analyzing its position it must set boundaries for the network it examines which are appropriate to the particular decisions that it is making. This creates a dilemma for any business since significant events may take place in distant parts of the network, or in "another" network, not fully associated with the main or obvious one. Also, threats to the future of a business often come from unexpected locations. For example Christensen (1997) describes how a company can be outflanked by a new technology offering apparently inferior benefits into a separate, although linked, sector of the network.

This suggests that the network pictures of companies, on which their interactions are based provide an important explanatory tool for both the researcher and the manager. Managers need to examine their own network pictures and those of the companies around them *and the assumptions on which they are based*. These may form a way of improving their understanding of the dynamics of the network and to reduce the danger of missing significant changes. Consequently the choice of network "horizons" is a major decision for management in the drawing of their "network pictures" (Ford et al., 2003).

We will now use the concept of network pictures to explore the interplay between a company and the surrounding network by examining a large scale case study of the leather network.

2.1. The development of the leather industry in the 19th century and the Booth Family of Liverpool

A complex network has surrounded the production and use of leather for many centuries. Participants in the network included those who trapped or farmed animals for their hides or furs. There were also local tanners who processed these and were often forced to cluster together by cities to limit the environmental effects of their noxious trade, or were often ostracised by society because they practiced it. Royalty were also closely involved because of their demand for fur and leather goods for their courts, and for many vital military needs. Townships wanted to acquire the technology of leather for reasons of industry or prestige and specialist traders operated in wide networks of relationships to buy and sell their wares. Suppliers of a wide range of raw materials including bark, alum, dyestuffs and even dog faeces were also involved. Many of these were members of guilds that sought to regulate trade, membership and technology. Every country in the world had and retains some form of tanning and leather industry.

2.2. The United States in the network

Prior to the 19th century the leather industry in the US had been craft-based. Farmers tanned hides and turned them into shoes and other goods on their own farms. Itinerant shoemakers traveled around and helped farmers with a lot of animals make shoes from them. They would also help farmers to trade products and a small export trade took place with the southern colonies who preferred to focus land and time on cash crops.

There was an unusual convergence of events. The opening of the west with the trans-Mississippi railroads, the introduction of the telegraph and refrigeration and the growing needs of the population for clothing and footwear led to big changes in the location and the structure of the leather industry (Hoover, 1937). European ideas of the

Enlightenment played an important role in the introduction of the concept of "interchangeable parts", which was to be a major catalyst in the development of mass production. Continued immigration from Europe, urbanization and rapid population growth developed a high level of entrepreneurship. Growth in the demand for meat led to the development of the Chicago packing houses and those interested in tanning found a centralized hide and skin supply for the first time. Centres for shoemaking were established, particularly around Boston, and for gloves in Gloversville in New York State. Young ladies began to leave their farms and work in shoe factories, returning home after a year or two in order to get married and settle down. This is very similar to the pattern seen in shoe production in Korea and China in the second half of the 20th century. Part of this process saw the continued development of new machines for the leather industry, and for new chemicals to be used. Examples included splitting machines which allowed thick hides to be processed in two separate layers, sewing machines, rotary machines to mimic hand operations for removing flesh and softening the leather; the steam engine, which allowed all of these to be put together and driven by belts as well as new vegetable tanning materials and synthetic dyestuffs.

The civil war in 1862–1865 created an unprecedented demand for leather and catalysed the network. Multi-story tannery mills were built with lines of new machines driven by steam power offering significant levels of mass production never before imagined.

2.3. The Booth Family in the network

During the 1800s industry and society in the UK was also changing. In Liverpool the Booth Family had decided that their family business in grain was coming to a close, most probably because they like other smaller grain merchants suffered considerably from the depression caused by the long fall in prices after the Napoleonic War (John, 1959, p. 22). After a number of family meetings it was decided to educate the two sons Charles and Alfred in international trading and shipping, using family friends in their tightly knit nonconformist—Unitarian—society.

In 1860 the brothers established a business in New York importing raw material (part processed) from the UK to the US tanning industry. At that time, the ties between New York and Liverpool were as close as those with London. Three years later they also set up a separate business with two small steamships that they commissioned doing general shipping and mail business between three northern ports in Brazil and Liverpool.

Some authors (e.g. Friedman, 2000) view the period from 1860 to the late 1920s as the first era of globalisation, with volumes of trade and capital flows relative to GNP, and labour flows over borders relative to population, very similar to those of today. The inaugural British Trade Union Congress in 1868 had a motion complaining of having to deal with "competition from the Asian Colonies". This globalization was also supported by various religious groups including the Quakers, Unitarians and Jews that gave particular business/social networks strong cohesion from shared values. These groups were widely spread geographically, yet interconnected, often by marriage. They were often restricted in the roles they could play in civic life and consequently focused on trade and business, and in their localities stayed together.

The Booths built an international business within this network. They searched the UK for tanners who wanted to export to the US and used the Liverpool to New York shipping services in which they had experience, helped by the trading office in New York of the Liverpool house of Rathbone and Company. They set-up office in the tanning area of New York and reduced risk by starting with a joint venture with an American leather merchant, until confident enough to move out on their own.

The Booths made a conscious decision, based on the advice of their family connections in Liverpool, to sell UK semi-processed leather to American tanners. The leather industry was growing rapidly in the US but was not attracting the attention of the bigger trading houses. They worked hard to build new relationships in the US and the UK, so that they could both understand the needs of US customers and find solutions from their UK suppliers. Within 10 years their high level of activity gave them a position in the leather industry network with a very large number of contacts. Their network picture would have been both wide and dense.

A potential bad debt offered them the opportunity to make a change in their network position and they became a tannery owner in Gloversville in 1877. This was a major change and would have caused comment throughout the network. One of the attractions to Booths of the tannery was the presence of Alexander Kent, a tanner who was working on a number of new processes, which, if they could be successfully developed Booths thought they would be able to exploit. Two fundamentally new ways of tanning were developed there in 1879 (Dongola) and 1884 (Chrome Tanning) (Thomson, 1985; Luck, 1986).

The Booth Group used the success of these technologies to expand their network contacts, particularly overseas. They sought out relationships for additional and different raw materials from goat and kid from Brazil, sheep from mainland Europe, and kangaroo from Australia. They also began to export the new leathers they were making in the US to Europe and Russia. Their Brazilian shipping links brought the Booth shipping line into the network and a high proportion of its activity before the end of the 19th century involved moving goatskins from Brazil to Philadelphia for tanning, and finished leather from there to other US ports such as Boston. The Booths also became bolder in their view of manufacturing and invested in more tanning, buying tanneries in Philadelphia and in Nottingham, England.

By 1914 Booths had changed their network position even further as a leather producer rather than a leather trading organization. Acquiring raw materials and distributing

finished leather had brought them into touch with all parts of the world. But the hides and skins they were bringing to the US were increasingly being used in their own plants rather than being sold to others. They had also added interests in glue, gelatine and felt (all bi-products of the raw hide and skin trade) on both sides of the Atlantic.

During the course of the 20th century Booths moved from being primarily traders to primarily tanners. This coincided with a new generation of immigration into the US from Eastern Europe and Germany. These immigrants included a number of fur traders who also traded leather and they appear to have built into that part of the network where the Booth relationships had weakened through becoming tanners.

3. Interpreting network entry in the case

A new business does not start with a blank sheet. In the same way that networks pre-exist any single new entry, so each new entry brings with it its own history. Thus an actor can hardly ever be said to "enter" a network completely from the outside. Thus the Booth Family used an existing relationship to apprentice Charles to a Liverpool trading house where they learned about trading and shipping and Alfred took a temporary post in the New York office of the well-known Liverpool merchant house, Rathbone and Company. In doing this, the brothers would have been building up a picture of the networks in which they were interacting and assessing the actors and the technologies involved. Having revised and extended their "network pictures" they would then be estimating both how easy it would be to move into the network as a new member and what would be involved in "networking" within it.

Their first moves would have been delicate. As employees and ex-employees they were already actors in the networks and would have had to decide how to manoeuvre into the business areas of others without provoking retaliation. The company documentation indicates a decision to set up in the same business, but in a non-confrontational way. Their existing network was already both empowering and restricting their new business, in line with the first network paradox, (Håkansson & Ford, 2002).

The Booths established many new relationships in the business start-up phase. These then became part of an organisational structure covering each of the two areas of manufacturing and trading and uniquely, when the two were combined. In its first 50 years the company never lost its strong Liverpool roots and "Chapel Culture". The very large number of relationships which had a similar origin made between actors who held shared beliefs, common backgrounds and of course, religion, had a very strong influence on the evolution of the network and the type of actor-bonds that were developed.

The Booth's strategy in the early years relates closely to the issues raised by the third network paradox. There is little evidence that the Booths tried to tightly control their network in the early years. Both the establishment in New York and the first trip to Brazil had a significant element of experimentation about them and allowed for flexibility and innovation by others. That is not to say there were not thought out, or that no business plan had been written. John (1959) describes a process of analysis for each business in a clear search for a network position where competition was less likely to be intensive and retaliation from incumbents was unlikely.

Many linkages were made, both formal and informal. The Booths positioned themselves within both the shipping and leather networks in a way that gave them very many contacts, creating the likelihood that they would see many new situations and be faced with innovative options, as turned out to be the case.

The UK material suppliers they chose were mostly young businesses which were keen to export and willing to adapt in order to enter new markets. The overriding impression given from the correspondence is one of avoiding rigidity, and maintaining a flexible approach, able to adjust to the conditions as they were uncovered. They moved to Brazil and the USA with specific linkage spots in the network to be filled, but only approximate ideas about with whom they would become attached.

Some business start-ups may involve new technology or an entirely new approach to existing customers and as such may involve an aggressive move when positioning the company in the network. This was not the plan here, although a lot of what happened was innovative. In shipping, Booths had one of the first fleets powered solely by steam, and their approach to the leather industry as manufacturers' commission agent took an old formula into a new international arena at a quite tumultuous moment.

Characteristics of this period of the Booth business appear to have been a high level of preparation, and a very flexible approach. They had planned two businesses in the family meetings over 10 years: one a shipping business and the other a trading business working as a commission agent for a manufacturer. We know from the family records that one major aspect of their deliberations was to stay in less competitive areas of the businesses they were entering. So for trading, leather kept them a little below the horizon and when they entered shipping they made their focus on the Amazonian ports rather than the busier routes such as Rio or Buenos Aires. Amongst the family's advisers were Rathbones, who perhaps did not want further competition in their own preferred commodities, and Holts shipping line who again had their own well-established routes and trades. It would seem quite likely that to get their help, the Booths effectively agreed not to become direct competitors.

4. Interpreting technology in the network

Booths came to changing technology in the leather industry by accident. In 1877 they were handed a "hot

potato" in the choice between accepting the loss of a serious bad debt or of backing the inventiveness of a nice but relatively unknown leather technologist. Did they really want to become manufacturers? How would their customers in the US react? How would their suppliers in the UK react? Did they have the skills to manage a tannery in upstate New York while still running the rest of a very complex and geographically spread business? The case highlights the issue of the "appropriateness" of the network pictures of different players faced with network change. It also illustrates the interplay between technology and network position as follows:

Traders in any technologically-intensive network are likely to have a difficult time at first and this was the case for the Booths. The correspondence indicates that buying the Gloversville tannery involved the company in trying to take a wider view of their business network and seeing the potential for new technologies. Although the purchase had a tactical element, it had its basis in strategy and the Booth belief that they could exploit successfully any invention which Kent could make. At no stage did the Booths pretend to be technologists. Rather than seeking to acquire all necessary technologies for themselves, they self-consciously relied on the technologies in the surrounding network. But they did ensure that in all their businesses they understood the implications of the technology involved. They would have been able to make a reasonable assessment of the potential of Kent's work, and the promise that he could produce better leather in a shorter processing time. A major element of this understanding came from the fact that their natural network horizon was defined by the area in which they were trading and was much larger than the individual tanners in the US, or of most of their other competitors. The Gloversville tanners were just that: specialists in the tanning of leather to be made up into gloves. The shoe centre in Boston could have been in another continent in terms of regular contact, but Booths had been selling successfully there and had opened an office in Boston in 1870. So Booths had the network links that went beyond the local and regional network inhabited by most of the businesses in the town.

4.1. Managing technology in the network

The commercialisation of innovation is likely to take place only some decades after their first invention (Lundgren, 1995) and the gap with chrome tanning was around 40 years. In the years between the initial patent and Booths starting to sell the chrome leather, many adaptations had been made both to the process itself and to the networks which were eventually able to profit from its exploitation.

Successful technological innovation mostly occurs at the interface between companies, because a single company may lack the financial and wider technological resources necessary to exploit an innovation. Perhaps more importantly, it may have a restricted network picture that prevents it from seeing the application of those resources. Hence, the network structure around an invention is key to its successful development. For example, the next technical development in which Booths were involved was to try to find a leather which would avoid staining the metal parts of corsets, when wet. Booth's were also in close touch with shoemakers' need for lighter weight and water-resistance leathers and were aware that tanners were having increasing problems with supplies of bark for their vegetable processes. Hence they were receptive to the inventor, in the belief that their relationships with companies with different problems across the network would provide at least one set of interested parties (Allan, 1995; John, 1959).

The case illustrates that the outcome is unpredictable when starting on a technical innovation when others are involved (Håkansson & Waluszewski, 2002). It is clear that in their investment in technology Booths were willing to take risks, hoping that their many network connections would allow them to find a viable use *for whatever emerged*. This contrasts with the failed attempts to innovate by European tanners working in very tight local industrial networks with local materials and few outside contacts.

The case also shows that a single company does not have full control over the evolution and exploitation of a new technology (Dosi et al., 1988). The Booths made no attempt to acquire ownership rights over the new chrome tanning technology, but closely watched as the inventor sold his patents in New York and work started to be done on the technology. Booths were asked to help as they had the best access to raw material supplies and to the final customers in the US and Europe. They knew that without ownership or control they effectively retained access to it through their knowledge of the surrounding network and an appreciation of its potential value.

Chrome tanning, like other new technologies depended on a range of existing technologies and relationships for its exploitation. Because of this it became quickly "embedded" in a number of networks. The embeddedness of a technology is multi-dimensional and relates to the location of knowledge of the technology, the necessity of bundling it with others for its exploitation in different applications, the evolution of the technology itself (Ford & Saren, 2001). The control of these processes would have been beyond the control of Booths or any other company, especially if further innovation was to occur in line with the third Network Paradox (Ford et al., 2003). The technology became important for the chemical industry in the US which had chromium available from local producers, and in Europe where chromium compounds were a bi-product of the synthetic dyestuff business. It worked well on small skins and this enabled tanners previously restricted to gloves and garments to branch out into shoe leather.

From the correspondence we have passing from Liverpool to New York we know that Booths considered knowledge and communication to be vital to business

success. They recognised that the leather industry was changing in many ways and they definitely were anxious to be aware of new developments in Europe and the USA. It is less clear that they deliberately set out to be pioneers but the work on the steamships and their uncle's steam boiler work indicates they did not mind being at the leading edge. In 50 years the Booths had been in some way involved in all the significant chemical advances in the leather industry, including the critical technologies that replace egg yoke and dog dung as tanning agents!

5. Interpreting network pictures and network outcomes

The outcomes of networking change the characteristics of a network, but because of the multiplicity of actors and the complexity of their different viewpoints, those outcomes are neither predictable nor controllable. The networking of each actor and their reactions to that of others will depend on their unique network pictures. The case illustrates clear differences in the network pictures of different players; the historical perspective provides insight into the outcomes of networking and the processes of network evolution.

In the mid-1880s the business of the Booth Company comprised the export trade of skins to USA from UK, a small tannery in Gloversville, a fleet of nine ships trading between Liverpool and Brazil and offices in London, Liverpool, Boston and New York. The company would have direct relationships with suppliers of hides and skins from around the world (Fig. 1).

This was after 20 years of business. The outcome of its own networking would have been viewed as very satisfactory by the Booth Company but they would have been the first to accept that it had developed differently than they had expected, not least with the unplanned change in Gloversville. They had strengthened their links into new areas of leather, but none of their previous major relationships had been severed and most had been greatly strengthened. This extension of relationships probably meant that many other members of the network would also have regarded the outcome as positive and this meant that there was confidence for information and ideas to flow freely. There was quite extensive communication amongst the actors that did not involve Booths.

We make another attempt to show part of the network as seen from the perspective of the Booths in Fig. 2, as we move into the 1900s. More relationships had developed around the New York office and between the US members and the raw suppliers and customers.

Decisions related to ownership are about the balance of control over flexibility (Håkansson & Snehota, 1995). At this time there was a big change in the outcomes of interaction with the Gloversville tannery, Booth's first move into ownership of manufacturing. The correspondence shows that Booths took the move seriously and moved a senior manager in to help. Their subsequent readiness to enter into ownership in the UK of a variety of companies becomes very apparent as the years pass. Quietly and insistently Booths adjusted their position in the network to become tanners as well as traders in the US business, until they had become one of the most significant tanning organisations in the world at that time and perhaps the only one with the associated worldwide knowledge and access to raw materials.

However just as much of what happened was a result of reaction to the interactions of others as it was to working to a defined blueprint. Becoming tanners came about as a response to fraud and the company got involved in chrome via a serendipitous meeting. At the same time the breadth and comprehensiveness of their network picture and their skill in building and managing relationships meant that they had the links to be able to adjust their position in the network to exploit these major events.

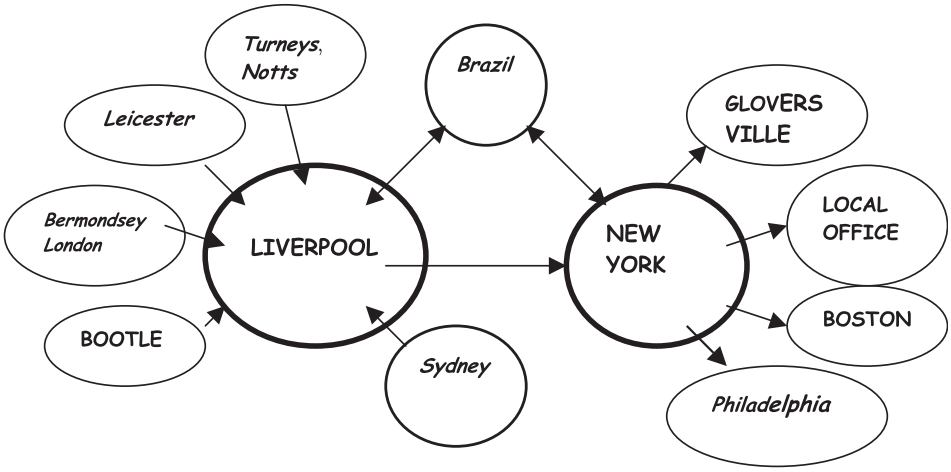

Fig. 1. The Booth Co. in the Network, mid-1880s—locations in capitals contain a wholly owned subsidiary, sales or purchasing office of Booths. Those in italics are suppliers or customers to Booths, although many of the relationships are very close.

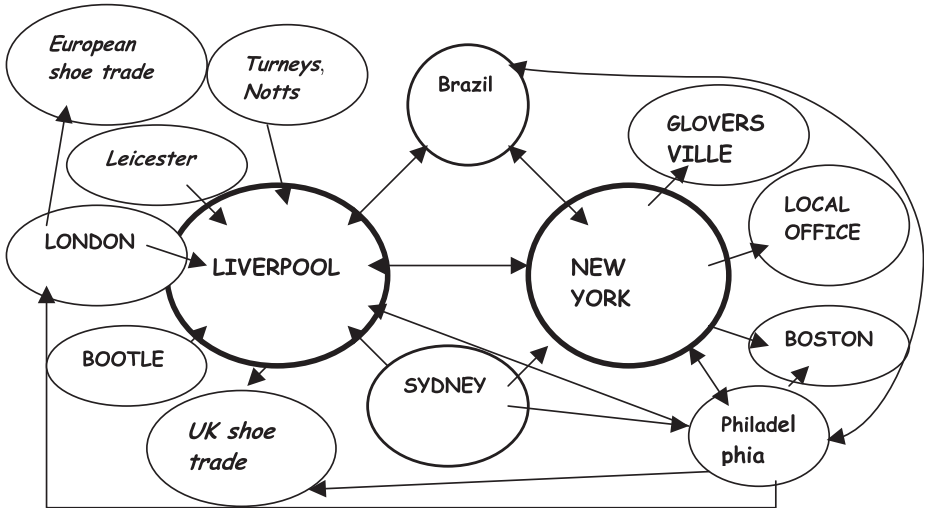

Fig. 2. The Booth Co. in the Network, early 1900s (locations in capitals contain a wholly owned subsidiary, sales or purchasing office of Booths. Those in italics are suppliers or customers to Booths, although many of the relationships are very close.).

Thus, the network picture held by the Booth Company comprised the business of leather, it's trading and its technology framed within an international trading and shipping context. There is an apparent open-mindedness in their approach to business structure which seems to come from those Liverpool associates who gave them advice. This group was willing to share information and give advice even although there was a potential for rivalry, and much of this interest could be viewed as a wish to expand the depth and breadth of their own network pictures. They were certainly very open-minded and appeared interested to view their businesses as a wide network, enthusiastic about the business of networking and trying to avoid too precise positioning or control.

There is certainly a strong connection between Booths success from 1853 to 1890 and their use of communication via their contacts and offices around the world. Offices were quickly located where they felt they would be beneficial. Shortly after the company began a Boston office was set up to deal with sales there and when skins were needed from Belgium and France Booths established an office in London where they could meet frequently with the European traders.

At the same time a large aspect of working as factors in the leather industry involved the provision of credit to smaller firms on both sides of the Atlantic. Associated with this was the need to be skilled in the movement of money between the US and Europe, at a time of fluctuating exchange rates and volatile raw material prices.

Careful management of Booth's network position and of their relationships made it difficult for others to emulate their approach. In line with the second network paradox, Booths were equally the product of their relationships and of what had happened within them as much as those relationships were the outcome of its own strategy (Håkansson & Ford, 2002). However, the company continued to adjust its position in it to avoid losing flexibility for further action. They also appeared able to do this without creating a negative reaction from their customers so that they were able to work within the network as buyers and sellers at the same time.

6. There is no hope

For the first half of the 20th century the Booth Group remained one of the largest and most geographically spread leather organisations, mixing both tanning and trading in its activities. It had strong relationships throughout the world with a balance of ownership and long-term partnerships. John Sebastian Macaulay Booth was at the helm at the end of the Second World War and strengthened the management with a large number of key executives with whom he had served in the war. The group began to concern itself about the quality of the raw material it was importing, part processed for its UK and US tanneries and this led to investments in Africa. Out of this came a new direction for the group towards investing in tanneries in Africa and New Zealand. Building strong relationships in these "colonial" regions was easy for the new management. The language was English and the business environment comfortable. Through this the Booth company came to effectively control "its" network from raw material to finished goods. Through this strategy, the Booth company became vulnerable to what might be called "the curse of the Third Network Paradox".

During this period things began to happen elsewhere in the leather world. A major development was the strategic move by the South Korean government to develop their economy with an export-led development of the labour intensive footwear industry. Farm labourers were brought into factories to make footwear for the US market. Korea

Table 2
The three network paradoxes and examples from the study

PARADOX 1:	
A COMPANY'S RELATIONSHIPS ARE THE BASIS OF ITS OPERATIONS AND DEVELOPMENT.	BUT THESE RELATIONSHIPS MAY ALSO TIE IT TO ITS CURRENT WAYS OF OPERATING AND RESTRICT ITS ABILITY TO CHANGE.
The partners built many relationships in diverse fields, not all in trading, which allowed them to move effectively into network positions in their two chosen areas.	Some of the relationships limited the options for the business at start up: the choice of the leather industry and the ports in Brazil for the shipping.
Their international, merchant house, and financial relationships extended their leather network well beyond the norms for the leather industry in the US or the UK. This enabled them to exploit new technologies.	As they moved more into tanning and selling finished leather, others began to fill the network space in raw hide trading as the Booth links weakened.
PARADOX 2:	
A COMPANY'S RELATIONSHIPS ARE THE OUTCOME OF ITS OWN DECISIONS AND ACTIONS.	BUT THE COMPANY ITSELF IS EQUALLY THE OUTCOME OF ITS RELATIONSHIPS AND WHAT HAS HAPPENED WITHIN THEM.
They had a coherent approach to developing strong relationships even before trading, creating a sound base for quick development when they started.	The tannery purchase in Gloversville came as a result of a customer failing, so they had a choice of ownership or a big loss.
Their relationship with tannery chemists came as a result of the decision to invest in tanning in Gloversville.	Their network position within the British Empire meant that they were unable to spot, or respond to, changes in the wider network.
The decision to exploit the new technologies led it to build new relationships for international raw material collecting and for worldwide customers.	These relationships led to the company regarding itself as primarily tanners rather than an international leather group.
PARADOX 3:	
COMPANIES TRY TO MANAGE THEIR RELATIONSHIPS AND CONTROL THE NETWORK THAT SURROUNDS THEM TO ACHIEVE THEIR OWN AIMS.	BUT THE MORE THAT A COMPANY ACHIEVES THIS AMBITION OF CONTROL, THE LESS EFFECTIVE AND INNOVATIVE THE NETWORK WILL BE.
Booths never tried to control the network at first and it was hard to separate owned actors and independent assets with whom they had strong relations.	In the 20th century Booths felt ownership of tanneries equalled success and the trading businesses were allowed to decline in importance and voice.
The approach in the early years was one of great flexibility, with a focus on innovation, and preparation.	As the 20th century progressed Booths were increasingly preoccupied with defending their tannery network.
Their success in chromium tanning came from a positive decision not to control the technology developed in their own tannery, but to exploit it when others had perfected what they had started.	Booths were not able to build a position in the Italian and Asian networks which developed strongly in the 1960s and 1970s because these were outside "their" network.
	For the first 75 years they were closely involved in all leading leather industry technical developments, while in their latter 75 years when they owned all the tanneries no meaningful developments came from the Booth Group.

does not have significant raw material so when the American tanners were not willing or able to export leather to them they built their own tanneries using European technicians and buying raw hides in the US hide markets. This move was very successful and soon a huge proportion of the world's footwear and leather clothing was being made in Taiwan, Korea, Brazil and India.

To fight off this flight of their market place to the third world tanners in southern Europe, Italy especially, and to a lesser degree Spain, began to accelerate the development of high fashion leather suited to help the better shoe and leather-goods manufacturers in Europe to maintain a quality and fashion lead over the cheaper importers. Santa Croce in Italy became the world capital for creating the new trends in leather and their seasonal ranges were eagerly awaited and much copied. Part of the Italian skill was a capability to make highly valuable leather out of lower grade and cheaper raw material. Meanwhile US and northern European tanners struggled with the closure of their customers as the move of all leather using industries overseas accelerated. At the same time, they experienced diminishing access to third-world raw material as those countries started to produce their own finished products, or started to sell to the emerging markets or the Italians who could pay more.

The Booth group had outstanding relationships in the old world, and in the colonies. In Brazil the relationships were in the Amazon basin region, not in the south near Sao Paulo and Porto Allegre where the shoemaking had started. They did not have relationships in Korea or Taiwan, nor in Italy or Spain. Consequently they were left out of this development. Increasingly they struggled with local politics in Africa to keep control of the tanneries and keep them profitable. At home the tanneries in the UK and in the USA saw a slowdown in investment as their long-term future grew less certain. With Mr. Booth and many of his ex-military colleagues all in their late 60s a decision was taken that it was time for a change and the group was sold to the Garnar Booth organisation. This was another UK group which was not dissimilar in its make up, with the difference that the CEO was a property developer. Steadily the well-situated city centre sites were closed and sold for development allowing the graceful decline of the business. The residual business was bought by Pittards plc in 1987 and an attempt made to amalgamate it into the more successful Pittards business. This failed and Pittards have closed or sold all of it. The final part was closed in September 2004. Now the only remnant is a very small trading office in Boston run by the son of the US manager, which keeps the name Booth and Company (Table 2).

7. Conclusions

This paper has used historical records to examine the evolution of a single company within a changing network. This case illustrates clearly that networks are neither recent inventions, nor indeed inventions at all. The case also illustrates that many supposedly modern phenomena such as rapid technological change and intense competition, "globalization", network position, networking and the associated paradoxes may in fact be intrinsic to the nature of business.

The case also illustrates the role of the different aspects of networking in business practice and in Booth's evolution (Ford et al., 2003). Thus Booths provides clear examples of the First Aspect of Networking; working within existing relationships. Key questions for both companies in this aspect concern which elements of the relationship to seek to change or *confront* and with which to *conform*. The case also shows clear examples of the Second Aspect involving choices for Booths between attempting to *create* a new network position for itself or *consolidate* its existing position. It is clear that there was a pronounced difference in the companies approach to this during the 19th century, when it was constantly creating and recreating its position as opposed to its consolidation post World War Two, which at least in this instance was disastrous. Finally, the case also illustrates the company's choices in the Third Aspect of Networking. These choices are between when to attempt to *coerce* others based on the company's views and when to *concede* to their knowledge or competence. Booth operated with a clear view of the network and its approach to it and sought to direct others to its own ends. But it was also prepared to follow the initiatives of others based on their expertise. However during the later stages of the company, its network position and the absence of relationships with innovative actors in the network, combined with the extent of its control over "its" part of that network meant that it was dependent on its own skills alone and was unable to take advantage of those of others. This illustrates strongly the value of trying to deduce the network pictures of various actors as the basis of their networking.

Finally, the case illustrates some of the apparent ingredients for success and for failure for companies operating in complex networks irrespective of their historical location. In the establishment of their new business five characteristics stand out:

1. The Booths planned well in advance and were conscious of the importance of relationships as a basis for building business and of the time and resources needed to develop them. They built these relationships before they actually started to trade in their own right. They had many strong actor-bonds capable of further development and worked well *within* those relationships.
2. They chose to develop a network position with a pattern of relationships that was both broad and dense, giving them the capability to observe potential opportunities and threats. They saw network position in evolutionary terms, but acknowledged that the evolution of the network and of their own position within it was not wholly within

their control. They successfully balanced coercion based on their own skills and network picture against conceding to the knowledge of others.
3. They maintained a high level of flexibility in their relationships and accepted and provoked changes readily.
4. They did not try and own the technologies they helped to create but rather worked to ensure they had the relationships in place to see what was happening, to influence the process and to exploit it, with both suppliers and customers.
5. Unlike the vegetable tanners of the US and the UK, they did not have a limited network horizon. A restricted network picture may not be problematic in some circumstances, but would have limited the company's ability to spot important trends and innovations.

However, just as political careers are all said to end in ultimate failure, so the Booth success story came to an end. The decline of the company illustrates clearly the obverse of its earlier success. It attempted to control that portion of the network that it saw as its "own" whether for geographical, cultural or historical reasons. This meant that it neither had nor was able to develop the new relationships that were necessary to capitalize on changing circumstances or the actions of others, in line with the third network paradox (Håkansson & Ford, 2002). It was just like its earlier, localised competitors who were unable to see what was happening because of the narrowness of their relationship structure. Even though it had an apparently global spread, its network position meant that it was myopic to change, with fatal results. There is no hope. . .

References

Allan, J. (1995, Sept–Oct). Traditional glazed kid manufacture—A lost art in the UK. *JSLTC*, *79*(5), 135.

Andersson, J., Håkansson, H., & Johanson, J. (1994). Dyadic business relationships within a business network context. *Journal of Marketing*, *58*, 1–15.

Andersson, P. (1996). *The emergence and change of Pharmacia Biotech 1959–1995. The power of the slow flow and the drama of great events*, doctoral thesis, Stockholm School of Economics, Stockholm.

Blankenberg, D. (1992). *Kopplade Relationer: Industriella Network*. Licentiate thesis, Uppsala University.

Christensen, C. M. (1997). *The innovators dilemma*. Boston: Harvard Business School Press.

Dosi, G., Freeman, C., Nelson, R. R., Silverberg, G., & Soete, L. (Eds.). (1988). *Technical Change and Economic Theory*. London: Pinter.

Ford, D., & Saren, M. (2001). *Managing and marketing technology* (2nd ed.). London: International Thomson.

Ford, D., Gadde, L. -E., Håkansson, H., & Snehota, I. (2003). *Managing business relationships* (2nd ed.). Wiley and Sons Ltd.

Friedman, T. L. (2000). *The lexus and the olive tree*. New York: Anchor.

Håkansson, H., & Ford, D. (2002). How should companies interact in business networks. *Journal of Business Research*, *55*, 133–139.

Håkansson, H., & Snehota, I. (1995). *Developing relationships in business networks*. London: Routledge.

Håkansson, H., & Waluszewski, A. (2002). *Managing technological development. IKEA, the environment and technology*. London, New York: Routledge.

Holmen, E., & Pederson, A. (2001). *Knowledge and ignorance of connections between relationships*. IMP paper, Oslo Conference.

Hoover, E. M. (1937). *Location theory and the shoe and leather industries*. Harvard University Press.

John, A. H. (1959). *A Liverpool merchant house, being the history of Alfred Booth and Company 1863–1958*. London: George Allen and Unwin.

Luck, W. (1986). The history of chrome tanning materials. *Journal of the Society of Leather Technologists and Chemists*, *70*, 99–103.

Lundgren, A. (1995). *Technological innovation and network evolution*. London: Routledge.

Thomson, R. S. (1985, July Aug). Chrome tanning in the 19th cent. *Journal of the Society of Leather Technologists and Chemists*, *69*(4).